

Year.	Mean.	Departure.	Year.	Mean.	Departure.
	<i>Inches.</i>	<i>Inches.</i>		<i>Inches.</i>	<i>Inches.</i>
1897.....	0.46	+0.13	1905.....	0.07	-0.26
1898.....	.25	-.08	1906.....	1.05	+.72
1899.....	.57	+.24	1907.....	1.02	+.69
1900.....	.19	-.14	1908.....	.17	-.16
1901.....	.01	-.32	1909.....	.19	-.14
1902.....	.10	-.23	1910.....	.05	-.28
1903.....	.07	-.26	1911.....	.15	-.18
1904.....	.04	-.29			

The greatest monthly rainfall was 1.30 inches at Hornbrook. Last year the greatest monthly amount was 2.10 inches at Monumental. There was no rainfall at nearly half of the stations reporting. The distribution of the rain geographically was irregular, and except in case of one general storm, the rainfall was in the form of showers, and places close together did not report rain at the same time. The heaviest 24-hour rainfall was 1.05 inches at Hornbrook.

#### SNOWFALL.

The month was one of comparatively little snowfall. It is not unusual to have some snow in the Sierras during the first half of June and occasional flurries during the last portion. There was little snow during the present month and no reinforcement of the snow cover. The cover was, however, of large extent and considerable depth—i. e., several feet at the beginning of the month. As stated above the depth decreased steadily and there was a fairly uniform rate of melting of about 4 inches a day, except between June 7 and 12, when the rate somewhat exceeded this. At the close of the month, while all lower levels were free from snow, the higher peaks remained clothed with snow which, with the soaked ground, gave every indication of a supply of water ample to meet the needs of the summer and early fall months.

#### SUNSHINE.

The following table gives the total hours of sunshine and percentages of possible:

Stations.	Hours.	Percentage of possible.	Stations.	Hours.	Percentage of possible.
Eureka.....	179	40	Sacramento.....	332	74
Fresno.....	424	96	San Diego.....	235	55
Los Angeles.....	278	65	San Francisco.....	230	52
Mount Tamalpais.....	393	89	San Jose.....	345	78
Red Bluff.....	361	80	San Luis Obispo.....	254	58

If we add the total hours of sunshine for the 10 Weather Bureau stations in California for the months of June, 1910 and 1911, we find that during the current year there is nearly 400 hours less sunshine than during the preceding year. There was a marked deficiency in sunshine at the coast stations.

#### THUNDERSTORM.

At Hornbrook a very heavy thunderstorm, claimed to be the heaviest in the history of the town, occurred on June 14 at 4.10 p. m., lasting until 5.40 p. m. One and five one-hundredths inches of rain fell in 1 hour and 30 minutes. Electric power lines were knocked down.

#### NOTE ON THE WIND MOVEMENT AT POINT REYES LIGHT DURING JUNE, 1911.

By Mr. JAMES JONES, Observer.

High winds were frequent and prolonged, as is usual at this season. The gale that began on the 27th, however, is worthy of special notice.

During the 72 hours beginning at midnight of the 26th-27th 4,113 miles were recorded, an average of 57.1 miles per hour.

During the 24 hours beginning at 9 p. m. of the 28th, the period of highest velocity, 1,586 miles were recorded, an average of 66.1 miles per hour.

The highest velocity for five minutes was 79 miles per hour, and the greatest number of miles actually recorded in any hour was 75.

While the gale was in progress the regular diurnal oscillations of pressure were slightly intensified and frequently interrupted by short but rapid variations.

Many of the shingles were blown off of the office roof during the gale. Spray from the ocean was driven so high up around the rocks that a rainbow at least 400 feet high was visible each afternoon.

#### NOTES ON THE RIVERS OF THE SACRAMENTO AND SAN JOAQUIN WATERSHEDS DURING THE MONTH OF JUNE, 1911.

By Mr. H. J. ANDREE, Observer.

The rivers of both watersheds were higher than usual for this month. This condition was due not so much to excessive snowfall during the winter and spring, but primarily to the fact that April and May were cold months, and left a greater portion of the snow than usual to be melted by the warm weather in June. At the end of the month the waters in the two main streams and all of their tributaries were falling rapidly.

*Sacramento watershed.*—The rivers of this watershed averaged from 1 foot to nearly 2 feet above their usual June stages and, excepting June, 1906, were the highest for this period since the records have been kept, the excess being more marked in the lower portion of the stream from Monroeville to Rio Vista. The lowlands were overflowed, as usual, during June.

At Sacramento the river stood at 20.8 feet on the 1st, and rose steadily, reaching a stage of 21.5 feet on the 13th, from which time it fell gradually to 18 feet on the 30th. At Colusa the highest water, 10.6 feet, was recorded on the 4th, and the lowest, 5.2 feet, on the 30th, while at Red Bluff the river fell from 5 feet on the 3d to 2.4 feet on the 30th.

*San Joaquin watershed.*—The main stream averaged 4 feet above the normal, while the tributaries were from 0.7 of a foot to 4.5 feet above. Without exception, the San Joaquin and its tributaries carried more water than in any June during the past five years.

At Lathrop the San Joaquin rose from a stage of 16.4 feet on the 1st to 19.2 feet on the 24th, which is 2.2 feet above flood stage. At Firebaugh the lowest reading, 9.2 feet, was reported on the 3d, and the highest, 13.6 feet, on the 24th, the latter being 1.6 feet above flood stage. At Pollasky the lowest water was 3.8 feet on the 1st, and the highest was 7.8 feet on the 22d.

There were three breaks in the levee in the vicinity of Lathrop, where the observer states that approximately 15,000 acres of land were flooded, much of which was planted to wheat and barley. The estimated cost of repairing the levee is \$12,000, and the damage to crops about \$20,000. At the crest of the flood the water was 3.2 feet higher than at any previous high water.

The damage in the immediate vicinity of Firebaugh was not great, although about 45 sections of grazing land were flooded for two weeks, but without loss of stock. A large break occurred in the levee on Temple River opposite Los Palos Colony, flooding 40 sections of farming land, which, it is estimated, caused a loss of about \$500,000, besides \$5,000 that it will cost to repair the levee.